

## Digitalization in/and Arts Education

Opinions and Perceptions from European and Latin American  
Arts Education Experts

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April 2021

### INTRODUCTION

Technology is a key aspect of the history of mankind, and technological change is often considered as a driving force of social change.<sup>1</sup> Digitalization is the latest big wave of technological change. Since the 1980's, we are immersed in a still intensifying digital transition. Does digitalization affect the way we think and feel about ourselves and the world? Does it change who we are as human beings, establishing a posthuman condition?<sup>2</sup>

There are surely many more controversies than established and accepted certainties about the social, economic and cultural impact of digitalization, and more specifically its impact in education, the arts, and in arts education. Can we still understand arts education as part of the conceptions of education, culture and the arts that have developed in the 19th and early 20th century? What is the impact of digitalization on arts education? Will arts education change into something completely different?

Survey research, using questionnaires with predominantly closed-ended questions, definitely has its limitations when it comes to complex, multidimensional and dynamic issues like digitalization. Questions regarding the actual impact of digitalization on arts education cannot be solved by asking arts education professionals what they think about it. It is much more a matter of philosophical and anthropological inquiry, and also of solid and longitudinal empirical education research.

Yet I have conducted a short and quick survey among arts education experts about digitalization in arts education. The survey focused on their opinions and expectations regarding the impact of arts education, and on their perceptions of digitalization and arts education in their countries. The research was conducted with a view to the More than Bytes Conference on digitalisation and arts education, Vienna, April 11, 2019.<sup>3</sup> The survey was held in February and March 2019 among a sample consisting of approximately 600 European and 500 Latin American experts. Nearly 160 persons accessed the online questionnaire; all of them completed the first section asking about their opinions, some 120 completed the whole questionnaire from start to finish. 64% of them were from eighteen European countries; 36% were from nine Latin American countries.<sup>4</sup>

Most respondents self-identified as researchers (or scholars) (46%) or as practitioners *and* researchers (16%), fewer solely as practitioners (18%) or as policy officials (10%), and others only mentioned another professional activity (11%). 'Practitioners' are teachers, professionals in various arts disciplines and other cultural professionals, to be distinguished from researchers (or scholars) and policymakers (or policy officials). Nearly a third of the respondents indicated that they are very strongly (11%) or rather strongly (20%) involved with digitalization in their work, nearly a quarter

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<sup>1</sup> Brian Sutton (2013). *The Effects of Technology in Society and Education*.

[http://digitalcommons.brockport.edu/ehd\\_theses](http://digitalcommons.brockport.edu/ehd_theses)

<sup>2</sup> Robert Pepperell (2003). *The Posthuman Condition. Consciousness Beyond the Brain*. Bristol: Intellect Books.

<sup>3</sup> See <http://educult.at/en/veranstaltungen/more-than-bytes/>

<sup>4</sup> See Appendix I, Table A.

(24%) that they are not at all or hardly involved, but most said that they are involved “to some degree” (46%).<sup>5</sup>

A final introductory remark concerns the context of the research and of this report. The survey was held one year before the COVID-19 pandemic broke loose. First results were presented at the More than Bytes conference in Vienna, April 2019. The publication of this report, originally scheduled for the end of 2019, was delayed because of personal circumstances, and I couldn’t manage to finalize it in 2020. Since March 2020, the issue of online learning and digitalization in education gained much more prominence due to the pandemic. So, in reading this report, one should be aware that it refers to pre-pandemic opinions and perceptions regarding the impact and importance of digitalization in arts education.<sup>6</sup>

## OPINIONS ABOUT DIGITALIZATION IN ARTS EDUCATION

The first part of the survey focused on the experts’ personal opinions about the impact of digitalization on several settings and aspects of arts education.

### Does digitalization require fundamentally new approaches to arts education?

First, we asked them if they agreed or disagreed whether digitalization *requires fundamentally new approaches to arts education*. Respondents were not afraid to give their opinion about this. Overall a large majority agreed (47%) or strongly agreed (11%) that digitalization requires fundamentally new approaches, while nearly a quarter (23%) did not agree. The rest (18%) neither agreed nor disagreed.

These are predominantly *individual* opinions because they do not vary with respondents’ age, gender, profession and special expertise, and neither between European and Latin American respondents. There is however a significant relationship with *involvement*.

Table 1. Agreement with statement “Digitalization requires fundamentally new approaches to arts education” by degree of involvement with digitalization.

Agreement with statement	Not or hardly involved with digitalization	Involved to some degree	Rather or very strongly involved	Total
	%	%	%	%
Strongly disagree	10	0	9	5
Disagree	24	22	9	19
Neither agree nor disagree	31	11	17	18
Agree	28	64	34	46
Strongly agree	7	4	31	13
Total (N=100%)	(29)	(55)	(35)	*(119)

Crosstabulation: Cramer’s V=0.37 (p=0.00). \*Valid response to both questions.

<sup>5</sup> The percentage of respondents who are rather or strongly involved with digitalization is higher among those who self-identified as both researcher *and* practitioner (42%) than among solely practitioners (32%) or researchers (27%) but this difference is not statistically significant.

<sup>6</sup> I would like to thank the following colleagues for assistance and advice: Sirikit Amann, Aron Weigl, Benjamin Jörissen, John Lievens and Edwin van Meerkerk for suggestions and comments on the draft questionnaire; Olga Lucía Olaya Parra for providing a long list of Latin American experts and their e-mail addresses, and Camila Malig Jedlicki and Alejandro Baquero for providing more Latin American addresses, and last but not least Elke van Hevele of Ghent University who took care of the online data collecting process. I am also greatly indebted to Camila Malig Jedlicki for checking the translation of the questionnaire into Spanish and of Spanish replies to survey-questions into English, and for general editorial suggestions. Camila is co-author of the complete Spanish version of this paper.

Table 1 shows that agreement is stronger as respondents are more strongly involved with issues of digitalization in their work. Nearly a third (31%) of those who are rather or strongly involved with digitalization do strongly agree, against only 7% and 4% of those who are not, hardly or to some degree involved. This association may be expected. However, an intriguing minority of the respondents who profess to be rather or very strongly involved with digitalization do *not* agree that it requires fundamentally new approaches (18%). Respondents who strongly *disagreed* or who strongly *agreed* were subsequently asked to briefly explain why.

Those who strongly *disagreed* generally tended to argue that digitalization only applies to the *means* of arts learning and teaching but not to its goals or content, or to the understanding of arts education.<sup>7</sup> For instance one of the respondents who professed to be rather or very strongly involved with digitalization argued that “[t]he epistemological heart of artistic education has been established in the last century. What we know at a psycho-pedagogical level and at a methodological level is not altered by the techniques and materials with which art is created.” In a similar vein: “Because digitization becomes a mechanism and a possibility, but it does not substantially alter the episteme.”<sup>8</sup> And: “Good arts educators have always embraced new technologies and adapted them for their subjects.”

In contrast, most respondents who strongly *agreed* that digitalization requires fundamentally new approaches argued that it deeply affects the arts and culture, and that this necessarily requires different concepts of education in and through arts. One respondent’s answer summarizes these arguments: arts education “should contribute to the major challenge of digitalization in education by focusing on post-digital culture and digital changes in the arts. If it does not do so, digitalization in education will be reduced to e-learning and the like.” Also, “digitalization vastly changes aesthetic practices in youth cultures”, and there is a generation gap between educators and youth culture that must be bridged. Digital-related knowledge of arts educators “has to come up to par with the development”. Finally, “as arts change with digitalization, and each art is itself based upon a particular (traditional) media structure, arts education has to react to this change”. This respondent refers to changes such as post internet art and gamification of arts. Another respondent from Brazil also asserts that the understanding of arts education dominated by traditional arts disciplines is challenged by the cultural impact of digital multimedia: “In the midst of the digital era, it is impossible to deny students an arts-oriented learning that does not contemplate the use of multimedia. Our students are creative and contemporary being involved in the digital world and we need to adapt the classes to this new format. We will be providing a better use of the tools of today’s world besides providing better learning in the field of knowledge.”<sup>9</sup> A third respondent stresses the impact of digitalization on our ways of seeing and thinking: “Digitalization changes the ways we think visually. It also changes the ways of learning, planning, developing, imagining, producing, and collaborating. It also offers possibilities for intertextual ways of thinking and producing the processes and outcomes in the real world, virtual reality, augmented reality and in the mixed realities.”

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<sup>7</sup> This position is taken by Christian Rittelmeyer (2018), *Digitale Bildung: Ein Widerspruch*. Oberhausen: Athena Verlag.

<sup>8</sup> Translations of Spanish texts: “El corazón epistemológico de la educación artística se ha establecido en el último siglo. Lo que sabemos a nivel psicopedagógico y a nivel metodológico no se ve alterado por las técnicas y materiales con los que se crea arte” and “Porque la digitalización se convierte en mecanismo y posibilidad, pero no altera sustancialmente el episteme.”

<sup>9</sup> Google translation of Portuguese text: “Em plena era digital é impossível negar aos alunos um aprendizado voltado para as Artes que não contemple o uso de multimídias. Nossos alunos são criativos e contemporâneos estando envolvidos no mundo digital e precisamos adaptar as aulas a esse novo formato. Estaremos proporcionando um melhor aproveitamento das ferramentas do mundo atual além de proporcionar melhor aprendizado da área de conhecimento.”

## Does digitalization have a beneficial impact on arts education?

Subsequent statements about the beneficial impact of digitalization on arts education all had the same answer options, from 1 (not at all) to 5 (very strong), with the middle value 3 indicating “to some degree”. These statements referred to different settings, to aspects of arts teaching and arts learning, to different arts education disciplines, to access for different target groups, and to the value of arts education for education in general and for society. I will briefly present general findings for each category of statements first, then look into correlations between the experts’ opinions and their profiles, and finally show some significant differences between the ratings of European and Latin American respondents.

### *General findings*

General findings regarding the supposed and expected impact of digitalization on different settings and aspects of arts education can be summarized as follows:<sup>10</sup>

- *Settings.* The beneficial impact on arts education in cultural institutions (e.g., museums) is rated much higher (4.1) than especially on arts education in primary school (3.3).
- *Arts teaching.* Ratings of the beneficial impact of digitalization on arts teaching varied for different aspects of teaching: from 3.2 and 3.3 for pedagogical climate, classroom management and efficiency, to 3.7 and 3.8 for innovative pedagogies, innovative arts concepts and content knowledge. It appears that digitalization is expected to affect the *content* of arts teaching more strongly than the general teaching *process*.
- *Arts learning.* In contrast to the impact of digitalization on arts teaching, ratings did not vary much (from 3.3 to 3.6) for different aspects of arts learning, such as learner motivation and the learning of different types of skills: productive, receptive and reflective skills in arts, creative, collaborative, thinking and communication skills.
- *Arts disciplines.* The beneficial impact of digitalization is rated highest for media arts education (4.7) and also much higher for visual arts (4.1) and music education (3.9) than for dance (3.3), theatre (3.4) and creative writing (3.5).
- *Access.* Ratings of the beneficial impact of digitalization on access for different target groups again varied strongly. Its impact was rated highest for young people (4.1) and physically handicapped persons (3.8) and lowest (3.1) for elderly people, low education and low income groups.
- *Value of arts education.* The beneficial impact of digitalization on the value of arts education for both education and society was rated 3.4 on average (between “to some degree” and “rather strongly”).

Experts who expect digitalization to have a rather or very strong beneficial impact on the value of arts education for education in general or for society were asked to briefly explain how digitalization contributes to this. Among Latin American experts, the Brazilian rated this highest; among the European respondents, the British. The following examples refer to respondents from these two countries.

Regarding the potential beneficial impact of digitalization on the value of arts education for education in general, a Brazilian respondent remarked that “[...] digitization can contribute in many aspects to education in general such as: to provide the organization and access to collections of subjects as varied as possible, as well as the old encyclopedias in paper, only these were not accessible to all. On the other hand, the expanded access that digitization promotes requires

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<sup>10</sup> See Appendix I, Table B, for all results.

mediation so that it can have educational potential.”<sup>11</sup> Another wrote: “It will be much easier to teach with the use of pictures of works of art.”<sup>12</sup> British respondents stressed the impact of digitalization on access and inclusion: “Enabling greater access to great content”, “Expands inclusivity”, “More open access - more equality - more opportunities for exploration and more suited to the learning resources which young people / disabled people are familiar with.”

Regarding the impact of digitalization on the value of arts education for society, one Brazilian respondent wrote: “Today’s society has a greater culture in searching information on the internet than visiting museums and galleries.”<sup>13</sup> Another stated that the “possibilities for artistic education are enormous, from the expanded access to a variety of forms of art and culture, in the most varied languages, reaching the creative manipulation of these artistic and cultural data for creative processes, of authorial or collective construction, more traditional ways of making art, and the invention of new forms of expression.”<sup>14</sup> Further Brazilian statements referred to understanding “collaborative work and with it interdisciplinarity”, more “interactivity and immersion in a vast environment of artistic knowledge”, and “greater access to information and artistic production.”<sup>15</sup> British respondents stated that digitalization creates “a climate for enjoyment through access”, that it fosters “greater awareness of culture / traditions and identity”, “enables individual curation and therefore individual learning and meaning can happen”, and that it “lowers the bar to broader participation in cultural learning.”

### *Opinions and the experts’ profiles*

The experts’ opinions about the beneficial impact of digitalization on arts education do not or hardly vary with their gender or age. However, younger respondents tend to rate its beneficial impact in different settings of arts education higher than older respondents, especially in primary and secondary school. For instance, average ratings of the beneficial impact of digitalization in primary school drop gradually as respondents are older, from 4.1 among those under 40 to 2.7 among those over 64 years of age ( $p < 0.01$ ). Older experts generally appear to be more skeptical about this than their younger colleagues.<sup>16</sup>

There are some minor statistical correlations between the experts’ opinions and their cultural specialism. Visual arts specialists tend to rate the beneficial impact of digitalization on arts education in secondary school, on pedagogical climate, on learning communication skills, on access for young people and on the value of arts education for society above average.

More and stronger correlations can be observed between the experts’ opinions and their professional activity. Practitioners tend to rate the beneficial impact of digitalization on arts education at school (primary and secondary), on several aspects of arts learning, on arts education

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<sup>11</sup> Google translation of Portuguese text: “La digitalização pode contribuir em muitos aspectos para a educação em geral tais como: propiciar a organização e acesso a acervos de assuntos os mais variados possíveis, assim como as antigas enciclopédias em papel, só que estas não eram acessíveis a todos. Por outro lado, o acesso ampliado que a digitalização promove, necessita de mediação para que possa ter um potencial educativo.”

<sup>12</sup> Google translation of Portuguese text: “Será muito mais fácil ensinar com o uso de imagens das obras de arte.”

<sup>13</sup> Google translation of Portuguese text: “A sociedade atual tem uma cultura maior em fazer pesquisas na internet do que visitar museus e galerias.”

<sup>14</sup> Google translation of Portuguese text: “As possibilidades para a educação artística são enormes, desde o acesso ampliado a uma variedade de formas de arte e cultura, nas mais variadas linguagens, chegando a manipulação criativa desses dados artísticos e culturais para processo criativos, de construção autoral ou coletiva possibilitando desde a aprendizagem de formas mais tradicionais de se fazer arte, quanto a invenção de novas formas de expressão.”

<sup>15</sup> Google translations of Portuguese text: “Compreender o trabalho colaborativo e com isso a interdisciplinaridade”, “Mais Interatividade e imersão num vasto ambiente de conhecimento artístico”, “Possibilita maior acesso a informação e produção artística.”

<sup>16</sup> Table C in Appendix I shows these and all other statistically significant correlations.

disciplines, on access for most target groups and on the value of arts education for education in general and for society significantly higher than other experts, especially researchers and in some cases also policy officials. Practitioners appear to have a more optimistic view while researchers have more reservations.

However, the experts' opinions about the beneficial impact of digitalization vary most frequently and most strongly with the degree in which they are involved with digitalization in their work. Like their affirmative opinion about the necessity of fundamentally new approaches to arts education, experts who are rather or strongly involved with digitalization tend to rate the beneficial impact of digitalization on nearly all settings of arts education, aspects of arts teaching and arts learning, on arts education disciplines, on access to arts education for most target groups, and on the value of arts education for education in general and for society much higher than those who are less involved.

#### *Differences between European and Latin American experts*

Comparison between European and Latin American experts showed that the latter generally and on average<sup>17</sup> tended to rate the beneficial impact of digitalization higher than their European colleagues.<sup>18</sup>

#### **Other important issues regarding the impact of digitalization**

In addition to the previous statements about the beneficial impact of digitalization the respondents were asked if they would like to stress one or two other important aspects and issues if these were not properly addressed before. Apart from specific issues that were raised by single respondents, three topics were addressed by several respondents: the relationship between digital and non-digital learning; training arts educators in the use of digital technologies; and the access to and availability of digital technologies.

Several respondents took the opportunity to criticize the focus on beneficial impacts of digitalization, or at least to express their concern about the neglect of non-digital aspects of education in and through arts. They refer to “the excessive use of technologies”, “the decrease in physical contact between subjects of education”<sup>19</sup>, and they are concerned about “the loss and deterioration of crafts and making”, the “negative impact on embodied cognition / embodied learning” or the “loss of face-to-face experiences”. Some explain, more detailed: “Why is there a focus on the ‘benefits’? What about the backdrops? Why suggest that form is prevalent over content?” Or: “Arts education may be pushed even more towards certain ideologies of creative ‘solutionism’. A ‘digital colonization’ of arts education (goals and aims) should be prevented while at the same time arts education has to develop its own take upon postdigital cultures.” One respondent critically asks if there is “a correlation between the aim to increase digitalization and the reduction in teaching hours in the arts?” Other respondents also addressed the relationship between digital and non-digital learning but not that antagonistic; they stress the need to balance digital and non-digital learning: “Why digitize art education completely in schools? Understand the balances between presence and digitalization to develop humanity in childhood and people in general”; or: “I think it is important to think about the digitalization of artistic education, but without neglecting ‘non-digital’ artistic

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<sup>17</sup> “Generally and on average”, because there are also interesting differences within these groups, for instance between British and Dutch, and between Brazilian and Mexican respondents.

<sup>18</sup> Table D in Appendix I shows the items that were rated significantly differently.

<sup>19</sup> Translation of Spanish texts: “Aspecto negativo: Empleo de las tecnologías en exceso” and “La disminución del contacto físico entre los sujetos de la educación.”

education, for example, I think it is important to visit museums, use non-digital materials (such as ink, paper, cut-outs, etc.).”<sup>20</sup>

Another topic revolved around the consequences of digitalization for the training of arts educators, at school and in other settings. Some respondents just mention “teacher training and pedagogical skills”. They stress the need to “enable arts educators to deal productively with digitalization”, or for “effective training for basic level teachers, so they can teach digital tools correctly”. One respondent also specifies the need “to address ethics and provide educators with guidance on use of technology with young people”. And another asks: “What is the teaching profile in arts education that guarantees its contribution to develop humanity using assertive technology from a heuristic and inclusive vision of culture? So that his work as a teacher of artistic, aesthetic and cultural education promotes mental frameworks in educational communities and in society that integrate the dimensions of art, technology and social life from a cultural heuristic vision. This is to understand technology as part of the culture and not as separate domains.”<sup>21</sup> One respondent especially refers to music teaching: “In the professional training of the musician, the custom workshop-like practice persists where the expert teacher educates the apprentice student to follow his instructions unequivocally, learning to model what the teacher orders. Perhaps the proposed digitalization could broaden the scope of vocational training processes, for which it is necessary to train teachers in the use of technologies.”<sup>22</sup> Other respondents refer to a “great reluctance of art teachers to engage in media+art education: what are the reasons, how to motivate them to try?”, or “how to overcome an obvious (traditional) distance of arts educators/educating artists towards technology?”

The third topic – access to and availability of digital technologies – was already addressed in the statements, but some respondents apparently felt the need to stress this in their replies to this open-ended question. They refer to “accessibility to tools, sustainability of the infrastructure of digital arts education in an age of rapid technological development?”, to “availability of hardware and software”, to “accessibility for lower income groups”, or to “the schools’ access to/possibilities for digitalization”. One expert, referring to the Mexican context, specified that “there are ethnic groups that do not have the minimum available to develop technologies.”<sup>23</sup>

### **Important research issues**

The final question in the section regarding the experts’ personal (professional) opinions about digitalization in arts education referred to research: “In your opinion, what are the most important research issues with regard to digitalization in arts education?”

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<sup>20</sup> Translation of Spanish texts: “¿Porqué digitalizar completamente la educación artística en las escuelas? Comprender los equilibrios entre presencialidad y digitalización para desarrollar la humanidad en la niñez y personas en general.” And: “Creo que es importante pensar en la digitalización de la educación artística, pero sin dejar de lado la educación artística “no digital”, como por ejemplo, creo que es importante visitar museos, utilizar materiales no digitales (como tinta, papel, recortes, etc.).”

<sup>21</sup> Translation of Spanish texts: “¿Cuál es el perfil docente en educación artística que garantice su contribución para desarrollar humanidad haciendo uso asertivo de las tecnologías desde una visión heurística e inclusiva de la cultura? De manera que su trabajo como profesor de educación artística, estética y cultural promueva marcos mentales en las comunidades educativas y en la sociedad que integren las dimensiones arte, tecnología y vida social desde una visión cultural heurística. Esto es comprender la tecnología como parte de la cultura y no como estancos separados.”

<sup>22</sup> Translation of Spanish text: “En la formación profesional del músico persiste la práctica tipo taller personalizado donde el maestro experto educa al alumno aprendiz para seguir inequívocamente sus instrucciones, aprendiendo a modelar lo que el maestro ordena. Tal vez la digitalización propuesta podría ampliar la mirada a los procesos de formación profesional, para lo cual se requiere que se forme a los maestros en el uso de las tecnologías.”

<sup>23</sup> Translation of Spanish text: “En el contexto Mexicano, existen etnias que no cuentan con el mínimo dispensable para desarrollar las tecnologías.”

Many respondents mention research into the design, uses and impact of digital technologies on and in arts education pedagogies in general or in branches of arts education, such as visual arts or music education. Some refer to digitalization as an aspect of the education of arts teachers. Apart from these topics, three other distinct issues were mentioned by more respondents: critical reflection upon possibly negative aspects of digitalization; research into the integration of digital and non-digital methods of teaching and learning; and the impact of digitalization on access to arts education. These topics are similar to the issues that were mentioned in reply to the previous open question regarding important issues about the impact of digitalization; in some cases they are hardly stated as research topics.

One category of answers again expresses concerns about the predominance of digitalization over non-digital cultural skills. “Learning to think and act without digital media”, “being careful not to ‘overuse’ digitalization, leave enough room for ‘paper’”, or that “digitalization does not undermine first hand experience of/access to the arts”, say some respondents. Others call for “deconstruction of myths about supposed benefits of digitalization in arts education” and criticize the “reduction of time allocated to the arts curriculum as leaders seem to believe that digitisation means everything is faster.” Or they assert that “digitalization does not drive pedagogy” and that “impact [is] only as good as the application and use of the technology - how to achieve good pedagogy?” These remarks are indeed hardly stated as research issues but rather as criticisms of a supposedly predominant digitalization discourse, except where one respondent puts forward the hypothesis that “digitalization in arts education tends to decrease the artistic making”.<sup>24</sup>

Another category refers to empirical and theoretical research issues related to the interplay and integration of digital and non-digital learning. These are questions such as: what are “common characteristics of digitalization and non digitalization in arts education?”, “how to combine best digital and real?”, “how to integrate the digitalization with the handcraft/bodily way to learn effectfully about/in the arts?”. Respondents call attention to “online and offline learning and the way both can contribute (blended learning, technology-enhanced learning)” or to “digitalization and embodiment/embodied learning/embodied interaction” or to “balances between face-to-face and digital learning in artistic education for the development of life skills that promote integral development”.<sup>25</sup>

The final category of answers again relates to access. Respondents refer to: “Inequality of access, both for the public and for content producers” and to “the impact of digitization on access to the contents of artistic education”<sup>26</sup> Others ask questions about the “expansion of access to information about the arts around the world”, about “what strategies the countries with a large percentage of low-income population are adopting to give access, through digitalization, to cultural knowledge and to artistic education”, and about “what countries have accomplished through the digitization for inclusion and enrichment of arts education to low-income groups, low schooling, disabled and ethnic and cultural minorities”.<sup>27</sup> Similar remarks simply refer to “accessibility and equality”, “equality of access to digitalization tools” or ask “what can digitalization do to reach more people?”, “is there a better access to arts, culture because of the digitalization or is something else more necessary?”, “how can we make it accessible (for the users)?”, or “is it possible to broaden the outreach of arts

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<sup>24</sup> Translation of Spanish text: “Digitalización en educación artística hace que disminuya el hacer artístico.”

<sup>25</sup> Translation of Spanish text: “Equilibrios entre el (...) aprendizaje presencial y digital en educación artística para el desarrollo de competencias para la vida que promuevan el desarrollo integral.”

<sup>26</sup> Translation of Spanish texts: “Desigualdad de acceso, tanto para los públicos como para los productores de contenidos” and “el impacto de la digitalización en el acceso de los contenidos de la educación artística”.

<sup>27</sup> Google translation of Portuguese texts: “Ampliação do acesso a informação sobre as artes ao redor do mundo”, “Sobre quais estratégias os países com grande percentual de população de baixa renda estão adotando para dar acesso, através da digitalização, ao conhecimento cultural e ao ensino da educação artística” and “Sobre o que os países tem sido realizado através da digitalização para inclusão e enriquecimento do ensino das artes aos grupos de baixa renda, baixa escolaridade, deficientes e minorias étnicas e culturais.”



education via digital tools, and if yes, how?” One respondent surmises that “it is unclear what data is available to support claims for access, and participation. Not clear on the structural barriers to participation”.

## DIGITALIZATION AND ARTS EDUCATION IN THE EXPERTS’ COUNTRIES

The second part of the questionnaire focused on the experts’ perceptions of digitalization in/and arts education in their countries regarding:

- the importance of digitalization in arts education practice, policy and research;
- the use of digital tools in secondary education;
- and digitalization as an issue in teacher training and professional development.

### Is digitalization an important issue?

Is digitalization an important issue among arts education professionals in different practical settings – in primary and secondary school, in cultural institutions, and in non-formal settings<sup>28</sup> – and in public policy and in arts education research in the experts’ countries?

Table 2 shows that many respondents, approximately one third (30 to 36%), say that it has some importance in different settings, in policy and research. But percentages of those who think that it is (rather or very) important or not or hardly important vary considerably across these different contexts.

Table 2. Importance of digitalization in the experts’ countries

Important issue?	In primary education	In secondary education	In cultural institutions	In non-formal arts education	In public policy	In arts education research
	%	%	%	%	%	%
Not at all	7	2	0	2	12	13
Hardly	30	22	6	16	31	26
Some importance	36	33	30	34	34	34
Rather important	20	30	35	26	13	13
Very important	5	10	25	15	8	8
Don’t know	2	2	5	7	3	8
Total (N=100%)	(129)	(129)	(129)	(129)	(128)	(128)

Respondents generally perceived digitalization to be more important among professionals in arts education practice – at school, in cultural institutions, and non-formal – than in public policy and in arts education research. However, its importance among professionals in cultural institutions was rated higher than in non-formal education, in secondary education and especially in primary education. So the main contrast occurs between arts education practice in cultural institutions on the one hand, where digitalization is perceived to be rather or very important by 60% of the respondents, and primary education, public policy and research on the other, where it is rather or very important according to no more than 25 and 21%.

The experts’ perceptions of digitalization and arts education in their countries hardly vary with their age, cultural specialism and degree of involvement, but they do vary with their gender and profession. Female experts generally tend to rate the importance of digitalization in most contexts higher than their male colleagues. And those who self-identified solely as practitioners tend to rate

<sup>28</sup> Non-formal arts education refers to out-of-school arts classes and courses, as a leisure activity for children, young people and adults.

its importance in primary and secondary arts education, but also in non-formal arts education, higher than researchers.<sup>29</sup>

Between European and Latin American respondents there is only one statistically significant difference: the latter rated the importance of digitalization in public policy in their countries even lower than their European colleagues.<sup>30</sup> However, comparison of respondents' perceptions across selected individual countries also shows significant differences within Europe and Latin America in the importance of digitalization *in primary education*: higher in the United Kingdom than in Germany, higher in Brasil than in Mexico.

### Digitalization in teachers' pre-service training and professional development

Pre-service training is "the education and training provided to student teachers before they have undertaken any teaching".<sup>31</sup> Professional development of teachers refers to further training after completion of pre-service training. This may be further training "on the job" or via external courses etcetera, suggested by the employer or on one's own initiative.

Table 3 shows that experts generally perceive that digitalization receives insufficient or hardly sufficient attention in educators' pre-service training, least of all in pre-service training of general teachers in primary education. Pre-service training for arts educators in different settings seems to lag behind opportunities for professional development, that were rated somewhat more favorably.

Table 3. Sufficient attention for digitalization in pre-service training and sufficient opportunities for professional development of educators?

Attention for digitalization in pre-service teacher education, and opportunities for professional development	Not sufficient at all	Hardly sufficient	Sufficient	Don't know, cannot say	N (=100%)
<i>Attention in pre-service training</i>	%	%	%	%	
General teachers in primary education	38	36	9	17	128
Arts teachers in secondary education	23	47	13	17	128
Arts educators in cultural institutions	18	47	16	20	128
Arts educators in non-formal arts education	22	43	11	24	128
Artists* who engage in arts education	26	39	17	18	128
<i>Opportunities for professional development</i>	%	%	%	%	
General teachers in primary education	31	36	17	16	126
Arts teachers in secondary education	28	34	23	16	128
Arts educators in cultural institutions	18	37	25	20	128
Arts educators in non-formal arts education	21	38	20	22	128
Artists* who engage in arts education	22	40	23	16	128

\* 'Artists' includes professional practitioners in all arts disciplines: musicians, visual artists, dancers, actors, directors, choreographers, etcetera.

Latin American respondents are even more critical about the attention given to digitalization in educators' pre-service training, especially general teachers in primary education, and about the availability of opportunities for professional development for arts educators than their European colleagues.<sup>32</sup>

<sup>29</sup> See Appendix I, Table E.

<sup>30</sup> See Appendix I, Table F.

<sup>31</sup> [https://en.wikipedia.org/wiki/Pre-service\\_teacher\\_education](https://en.wikipedia.org/wiki/Pre-service_teacher_education)

<sup>32</sup> See Appendix I, Table F. The number of respondents was too low for crosstabulations of respondents assessments' of attention in pre-service training and opportunities for professional development across separate selected countries.

## Use of digital tools in secondary school and in non-formal arts education

Experts perceive that in arts education at secondary school digital tools are used much more intensively in media arts than in all other arts disciplines: see Table 4. In visual arts and music digital tools are used more intensively than in creative writing, and in dance and theatre education least of all. Perceptions of the use of digital tools in non-formal arts education are similar to secondary school: far more intensively in media arts than in visual arts, music and creative writing, and least in dance and theatre.

Table 4. Use of digital tools used in conventional arts subjects at secondary school and in non-formal arts education.

Use of digital tools in secondary school and non-formal arts education	1 Not at all	2 Hardly	3 To some degree	4 Rather intensively	5 Very intensively	Don't know/does not apply	N (100%)	N valid (values 1-5, don't know not included)	Mean (don't know not included)
<i>Secondary school</i>									
Visual arts	2	22	40	16	5	16	129	109	3.0
Music	2	22	42	16	5	14	129	111	3.0
Dance	15	30	24	7	1	23	129	99	2.3
Theatre	9	34	27	7	1	22	129	101	2.4
Creative writing	6	29	30	8	3	25	129	97	2.6
Media arts	2	6	27	24	26	15	129	110	3.8
<i>Non-formal arts education</i>									
Visual arts	2	21	33	16	9	20	129	103	3.1
Music	4	20	36	16	5	19	129	105	3.0
Dance	8	29	24	9	3	28	129	93	2.6
Theatre	7	33	20	10	3	26	129	95	2.6
Creative writing	4	28	23	12	5	29	129	92	2.8
Media arts	2	12	19	24	23	20	129	103	3.7

Practitioners rated the use of digital tools in secondary education higher than researchers, in all arts subjects except media arts, where it was rated equally high.<sup>33</sup>

In Latin America, digital tools are used less intensively in arts education than in Europe, especially in media arts education at secondary school and in non-formal arts education. British respondents rated the use of digital tools in non-formal music education to be more intense than especially their German and Mexican colleagues.<sup>34</sup>

### Major policy and research issues

Respondents who perceived the importance attributed to digitalization in arts education public *policy* in their country to be rather or very high – no more than 21% of them did: see Table 2 –, were subsequently asked to specify one or two major policy issues. Apart from various separate topics, several respondents referred to required teacher training and some to funding digital facilities in schools and to accessibility and participation as major policy issues.

<sup>33</sup> See Appendix I, Table E.

<sup>34</sup> See Appendix I, Table F.

Respondents who perceived the importance attributed to digitalization in arts education *research* in their country to be rather or very high (also 21%) were asked to specify one or two major research issues. Fifteen respondents referred to various issues but these cannot be classified into a few main topics. Instead, the answers by two respondents, one from El Salvador, the other from Germany, may be cited to illustrate the vast difference between these countries where it concerns research problems and facilities. The respondent from El Salvador basically describes the unsatisfying state of arts education in general, not especially in arts education research and even less of digitalization as a research issue – and this situation may well apply to more Latin American countries:

“In the first place, the non-updated profile of teacher education in artistic education, secondly the lack of access to Communication and Information Technologies, Internet access and equipment in public schools where at least 80% of the population receive elementary and secondary education. [...] Currently there is only one program of these in the whole country that is of continuous training of the Ministry of Education for teachers in service in basic and secondary education and another private that must be updated, there is already awareness in the Ministry about the huge deficit of specialized teachers. The system will open a teaching staff at the Higher Specialized Institute of Arts of El Salvador (Public) and the Teacher Training Institute (INFOD) plans to certify 800 artists to work as art education teachers in the educational system prior to training processes. This for specialized teacher training for both formal and non-formal education.”<sup>35</sup>

In contrast, a German respondent refers to a special research program “digitalization in arts education” that is funded by the federal ministry of education and research up to a total of 10 Mio € and in which 24 universities are involved.<sup>36</sup>

But generally, in Europe as well as in Latin America, there seems to be quite a big gap between what experts perceive to be major research issues in their countries on the one hand and their personal opinions about the importance of many research issues on the other. This suggests that demand for research into digitalization among arts education professionals is higher than supply of such research.

### **Research publications**

Respondents who indicated that research on digitalization is an important topic in arts education research in their countries were finally asked to refer to one or two important and recent research publications about digitalization in/and arts education in their countries. Fifteen of them mentioned one or two publications. These are listed in Appendix II.

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<sup>35</sup> Google translation (adapted) of Spanish text: “En primer lugar el Perfil no actualizado de la formación docente en educación artística, en segundo lugar la falta de acceso a las Tecnologías de la Comunicación e Información, acceso a Internet y equipo en los centros escolares públicos en donde por lo menos el 80% de la población estudia educación básica y media (secundaria).” And: “La insuficiencia de programas de formación docente en educación artística actualizados. Actualmente solo hay un programa de estos en todo el país que es de formación continua del Ministerio de Educación para maestros en servicio en educación básica y media y otro privado que debe actualizarse, ya hay conciencia en el Ministerio sobre el enorme déficit de profesores especializados en el sistema y se abrirá un profesorado en el Instituto Superior Especializado de Artes de El Salvador (Público) y el Instituto de Formación Docente (INFOD) planea certificar a 800 artistas para que trabajen como profesores de educación artística en el sistema educativo previo procesos formativos . Esto para la formación docente especializada tanto para la educación formal como para la no formal.”

<sup>36</sup> The funding scheme for research into digitalization in cultural education in Germany was issued by the Federal Ministry for Education and Research in 2017. Thirteen research projects received funding from 2018 until 2021.

## CONCLUSIONS

The survey among European and Latin American arts education experts, held in February and March 2019, yielded interesting findings concerning the assumed and expected impact of digitalization on arts education, and their perceptions of digitalization issues in arts education in their countries.

Firstly, asked about their personal and professional opinions, most respondents agree that digitalization does or will have a beneficial impact on arts education, at least to some degree. Answers to several questions regarding beneficial impacts suggest that respondents can be divided into four categories: 'firm believers' (approximately 20%); 'moderate believers' (30%); 'cautious followers' (35%); and 'outright skeptics and critics' (15%). Firm and moderate believers generally stress the beneficial impact of digitalization and assert that it requires fundamentally new approaches to arts education, especially because 'postdigital culture' has deeply affected the arts. Cautious followers and skeptics are more inclined to state that digitalization merely adds new instruments, media and subjects to the learning and teaching but has not changed arts education's basic pedagogic epistème, its content or aims. Some experts are outright critical of the importance attributed to digitalization at the cost of the physical, bodily aspects of arts education. Further, looking more closely at arts disciplines and at settings and participation, respondents expect the strongest beneficial impact on media and visual arts education, on arts education in cultural institutions, and on access for young people. In contrast, its beneficial impact is rated comparably low for theatre and dance education, for arts education in primary school, and for access for elderly people and for low income and low education groups.

Second, with regard to experts' assessments of digitalization issues in their countries, findings suggest that digitalization is a much more important issue in cultural institutions than in schools, especially primary schools, and in public policy. Further, experts assert that in secondary school arts education digital tools are used much more intensively in visual arts and music education than in other disciplines, especially dance and theatre education – which mirrors their opinions on the beneficial impact of digitalization in different disciplines. Experts also generally feel that digitalization receives insufficient or hardly sufficient attention in educators' pre-service training, least of all in primary school general teachers' training. They rated opportunities for professional development somewhat more favorably. Finally, they generally find that digitalization is not an important issue in arts education public *policy* in their countries; those who think otherwise, refer to (e.g.) policies with regard to teacher training, funding digital facilities in schools and to accessibility and participation.

Third, some of the experts' opinions, perceptions and assessments vary with some personal and professional characteristics. With regard to beneficial impacts of digitalization, gender and age do not matter much, although younger experts tend to be more positive about this than their older colleagues, especially concerning primary and secondary school arts education. Further, practitioners (e.g., teachers, teaching artists) have higher expectations of various beneficial impacts than especially researchers. While practitioners tend to be moderate or firm believers, researchers tend to be cautious followers or outright skeptics. Of course this is an exaggeration, but it refers to real tendencies, I think. However, the experts' opinions vary most frequently and most strongly with their professional involvement with digitalization. Stronger involvement with digitalization generally coincides with higher expectations of its beneficial impact in nearly all settings, aspects and disciplines of arts teaching and learning, on access to arts education, and on the value of arts education for education in general and for society. Interestingly, however, there is also a small minority of experts who claim to be strongly involved with digitalization but who take a critical stance on an overly optimistic view of its beneficial impact. Finally, the experts' perceptions of digitalization and arts education in their countries hardly vary with their personal and professional characteristics, except that female experts generally tend to rate the importance of digitalization in most contexts higher than their male colleagues – an intriguing difference that begs explanation.

Fourth, the survey findings show some interesting differences in opinions and assessments of Latin American and European experts. In their opinions, Latin American arts education experts

generally express an even stronger belief in beneficial impacts of digitalization than their European colleagues. In contrast, in their assessment of digitalization issues in their countries, they generally feel that digitalization receives less attention in teachers' pre-service training and professional development and that digital tools are used less intensely in secondary school and in non-formal settings; they also express stronger criticism of the low attention given to digitalization in their countries' public policy with regard to (arts) education. So, in sum, the gap between experts' personal and professional expectations of the beneficial impact of digitalization in arts education on the one hand, and their assessment of actual arts education practice and public policy in their countries on the other hand, seems to be even wider in Latin America than in Europe. However, one caveat is in place here: comparison between the two continents may obscure significant differences between separate countries *within* Europe and *within* Latin America.

### CHALLENGES FOR RESEARCH, PRACTICE AND POLICY

In 2019, before the global coronavirus pandemic, digitalization was not (yet) a very important issue in arts education research, according to most experts who participated in the survey, and many stressed the need for more research. During the pandemic, many arts educators were forced to develop or expand their competencies in online teaching, and this may have influenced their opinions about the impact and importance of digitalization in arts education. One may expect that research issues identified in 2019, concerning the design, uses and impact of digital technologies on and in arts teaching and learning have become more important and urgent to many experts. The same applies to the integration of digital and non-digital methods in arts education and to the impact of digitalization on access and participation. Yet, even if the pandemic has increased the urgency and importance of digitalization in arts education, it may not have changed the nature of the basic questions regarding its impact.

Our findings from the 2019 survey regarding assumed and expected beneficial impacts of digitalization, suggest three types of specific further questions.

The first type are questions about *assumptions* regarding the overwhelming and deep impact of digitalization on the understanding and practice of arts education. Where many arts education professionals tend to embrace digitalization as a promise of renewal and innovation, or at least to accept its inescapable consequences for arts teaching and learning, others call for critical reflection upon possibly negative aspects, especially the overemphasis on visual and auditive cognition and information processing at the cost of physical, bodily experience. This calls for a serious debate.

Research questions regarding the *empirical evidence* for several supposedly beneficial impacts are a second type. Are beneficial impacts indeed bigger for media and visual arts education than for theatre and dance education, and if so, why is this? Are these impacts indeed stronger in cultural institutions than in school settings, and if so, why? Are beneficial impacts on access for young people indeed much stronger than for elderly people and for low education and low income groups, and if so, why?

The third type are predominantly normative and 'political' questions that address *specific challenges* for practice, policy and research related to the impact of digitalization. Should the beneficial impact of digitalization in theatre and dance education be enhanced, and if so, how can this be done? Or should non-digital theatre and dance education rather be upheld as a stronghold of the bodily, physical aspect of arts education against the emphasis on visual and auditive cognition in digital learning, as Christian Rittelmeyer contends?<sup>37</sup> Should the impact of digitalization on arts education at primary and secondary school be enhanced; and if so, how can this be done? Should a

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<sup>37</sup> Christian Rittelmeyer (2018). *Digitale Bildung: Ein Widerspruch* (p. 157). Rittelmeyer warns for a possible "sensory deprivation" induced by a "digital monoculture that could become too powerful" in pre-school and school settings, focusing on visual and cognitive perception at the cost of physical (bodily) and multisensory forms of expression, perception and learning (especially through theatre and dance).

stronger beneficial impact of digitalization be realized for elderly people and for low income and education groups; and if so, how can this be done?

Apart from these questions regarding arts education practice, research and policy, digitalization – as a contemporary issue – also raises interesting sociological questions about the proliferation of different opinions and perceptions within the wider professional arts education community that includes academics, researchers and policy makers in the field. Digitalization issues may contribute to unifying or divisive tendencies within the community and to shifting positions of interpretive authority that will also affect competition over staffing and research resources. A majority of experts agreed that digitalization requires fundamentally new approaches to arts education, and it will be interesting to observe if and how this relates to professional, institutional and public policies with regard to arts teaching qualifications and arts education research.

Finally, the survey offers a starting point for further *comparative* research into issues of digitalization in arts education in Latin America and Europe. However, such further studies should be based upon a critical examination of substantial contextual differences in (arts) education systems and in education and cultural policies between continents and separate countries. Next, a selection of meaningful and important and comparative topics of mutual interest should be made. If a priority list would be drawn up now, Spring 2021, the impact of the COVID-19 pandemic on digitalization in arts education would probably score high. A targeted data gathering would only follow after and from these preparatory stages.<sup>38</sup>

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<sup>38</sup> Further comparative research can also build upon the project Monitoring Arts Education Systems (2015-2018): Teunis IJdens, Ben Bolden & Ernst Wagner, Eds. (2018). *Arts education around the world: Comparative Research seven years after the Seoul Agenda. International Yearbook for Research in Arts Education*, Volume 5|2017. Waxmann: Münster.

## Appendix I. Additional statistical tables

Table A. Survey response: countries of reference and nationality

<i>Country of reference</i>	<i>N</i>	<i>Nationality</i>	<i>N</i>
Argentina	1	Argentina	1
Austria	5	Austria	3
Belgium	8	Belgian	7
Brazil	12	Brazilian	10
Bulgaria	1	Bulgarian	3
Chile	3	Chilena	3
Colombia	7	Colombiana	7
Cyprus	1	Cypriot	1
El Salvador	1	Salvadoreña	1
Spain	5	Español	3
Finland	6	Finnish	6
France	1	Français	1
Germany	17	German	18
Guatemala	1	Guatemalteca	1
Hungary	1	Hungarian	1
Ireland	3	Irish	3
Mexico	16	Mexicana	13
Netherlands	12	Dutch	12
Norway	2	Norwegian	2
Peru	4	Peruana	3
Poland	2	Polish	2
Portugal	4	Portuguese	4
Slovakia	1	Slovak	1
Slovenia	1	Slovene	1
Switzerland	2	Swiss / Italian	1
United Kingdom	10	British	8
Uruguay	1	Uruguayana	1
Kenya	1	Española/Colombiana	1
No data	29	Italian	1
<b>Total</b>	<b>158</b>	No data	39
		<b>Total</b>	<b>158</b>



Table B. "Digitalization does (or will) have a beneficial impact on ..."

<i>Items beneficial impact on ...</i>	<i>Level of agreement</i>						<i>Response and mean values</i>			
	1 Not at all	2 Hardly	3 To some degree	4 Rather strong	5 Very strong	6 Don't know	N valid (1-6) =100%	N valid (1-5)	Mean (1-5)	
<i>Settings of arts education</i>										
Primary school	3	17	37	27	15	2	158	155	3,3	
Secondary school	1	9	29	32	27	2	158	155	3,8	
In cultural institutions	3	2	22	32	40	1	158	156	4,1	
Non-formal arts education	1	8	34	30	26	2	158	155	3,7	
<i>Aspects of arts teaching</i>										
Content knowledge	3	7	26	34	27	3	149	145	3,8	
Quality of instruction	3	13	40	30	12	2	149	146	3,4	
Pedagogical climate	6	19	35	23	12	5	149	141	3,2	
Classroom management	4	13	42	26	11	5	149	142	3,3	
Assessment of learning outcomes	2	7	42	30	15	5	149	142	3,5	
Efficiency	5	13	36	28	13	4	149	143	3,3	
Innovative pedagogies	3	5	29	34	25	4	149	143	3,7	
Innovative arts concepts	3	3	32	30	28	4	149	143	3,8	
<i>Aspects of arts learning</i>										
Learner motivation	2	6	38	35	15	3	147	142	3,6	
Developing productive arts skills	4	14	36	31	12	3	147	142	3,3	
Developing receptive skills in arts	3	10	31	42	12	4	147	141	3,5	
Developing reflective skills in arts	5	13	40	27	12	3	147	142	3,3	
Learning creative skills	5	12	38	29	13	3	147	143	3,3	
Learning collaborative skills	4	16	38	26	14	1	147	145	3,3	
Learning thinking skills	5	16	33	33	12	1	147	145	3,3	
Learning communication skills	4	9	33	35	17	2	147	144	3,5	
<i>Arts education disciplines</i>										
Visual arts	2	1	26	30	39	3	155	151	4,1	
Music	3	3	23	38	31	3	155	151	3,9	
Dance	3	10	52	21	10	5	155	148	3,3	
Theatre	3	7	48	27	11	4	155	149	3,4	
Creative writing	3	12	30	30	20	5	155	148	3,5	
Media arts	1	1	7	14	75	3	155	150	4,7	
<i>Access for target groups</i>										
Children	3	14	35	28	19	2	145	142	3,5	
Young people	-	4	21	35	39	1	145	143	4,1	
Adults	-	7	35	42	14	2	145	142	3,6	
Elderly people	3	20	46	20	9	3	145	141	3,1	
Low income groups	4	26	32	21	12	5	145	138	3,1	
Low education groups	4	29	32	19	12	4	145	139	3,1	
Physically handicapped	1	8	27	31	29	5	145	138	3,8	
Mentally handicapped	4	15	37	20	15	10	145	130	3,3	
Ethnic and cultural minorities	3	10	43	23	15	6	145	136	3,4	
<i>Value of arts education</i>										
For education in general	6	8	35	33	12	7	137	128	3,4	
For society	6	9	34	33	12	7	137	128	3,4	

Table C. Correlations between respondents' ratings of the beneficial impact of digitalization and personal and professional characteristics.

<i>Items</i>	Gender	Age	Profes- sion	Cultspec	Invol- vement
<i>Impact on settings</i>					
Primary school		**	*		**
Secondary school		*	**	*	**
<i>In cultural institutions*</i>					
Non-formal arts education**					*
<i>Impact on arts educ. disciplines</i>					
Visual arts		*			*
Music			*		**
Dance			*		*
Theatre			*		**
Creative writing					**
<i>Impact on aspects of arts teaching</i>					
Content knowledge					**
Quality of instruction				*	*
Pedagogical climate					**
Classroom management					#
Assessment of learning outcomes				#	*
Efficiency					*
Innovative pedagogies					*
Innovative arts concepts					*
<i>Impact on aspects of arts learning</i>					
Learner motivation					*
Developing productive arts skills					*
Developing receptive skills in arts			*		
Developing reflective skills in arts		*	*		*
Learning creative skills		*			*
Learning collaborative skills		*	**		**
Learning thinking skills		*	*		**
Learning communication skills		*	**	*	**
<i>Impact on access to arts education</i>					
For children				*	*
For adults			*		**
For elderly people		*	**		**
For low education groups	*		*		*
For physically handicapped			**		
For mentally handicapped			**		
For ethnic and cultural minorities			*		**
<i>Impact on the value of arts education</i>					
For education in general			*		**
For society			*	*	**

ANOVA: \*\*p<0.01; \*p<0.05. 'Cultspec' means cultural specialism: visual arts, music, visual arts plus other discipline(s), theatre or dance (eventually including other but not visual arts).

Table D. Ratings of the beneficial impact of digitalization: statistically significant differences between European and Latin American respondents.

Items	Europe	Latin America	p	N
Settings: Non-formal arts education	3.6	4.2	**	127
Arts teaching: Content knowledge	3.6	4.2	**	125
Arts teaching: Quality of instruction	3.2	3.7	**	126
Arts teaching: Classroom management	3.1	3.6	*	122
Arts teaching: Efficiency	3.2	3.6	*	124
Arts teaching: Innovative pedagogies	3.6	4.1	**	123
Arts learning: Learner motivation	3.4	3.8	*	125
Arts learning: Productive skills	3.2	3.6	*	124
Arts learning: Reflective skills	3.1	3.6	**	124
Arts learning: Creative skills	3.2	3.6	*	125
Arts learning: Thinking skills	3.1	3.7	**	127
Arts disciplines: Creative writing	3.4	3.9	*	122
Target groups: Children	3.2	3.8	**	125
Target groups: Elderly people	3.0	3.3	*	124
Target groups: Low income groups	2.9	3.4	*	121
Value of arts education: for education in general	3.2	3.7	**	119
Value of arts education: for society	3.2	3.8	**	119

Average ratings. ANOVA: \*p<0.05; \*\*p<.01.

Table E. Perceptions and profile: significant differences

	Gender	Age	Profes- sion	Cult- spec	Invol- vement
<i>Is digitalization and important issue?</i>					
Among professionals in primary education	**		**		*
Among professionals in secondary education	**		**	*	*
Among professionals in cultural institutions	*			*	
Among professionals in non-formal arts education			*		*
In public policy regarding arts education	*				
In arts education research	**				
<i>How intensely are digital tools used: second. school?</i>					
Visual arts	*		**		
Music			*		
Dance			**		
Theatre			**		
Media arts		*			
<i>How intensely are digital tools used: non-formal?</i>					
Theatre			*		
<i>Sufficient attention in pre-service training?</i>					
General teachers in primary education	#		**		
Arts educators in cultural institutions					*
<i>Sufficient opportunities professional development</i>					
General teachers in primary education	#			*	
Arts educators in cultural institutions	*	#		*	

Only data for variables and in cells where there is a statistically significant difference: \*\*p<0.01; \*p<0.05; #p<0.10. Importance of digitalization and use of digital tools: average ratings on scale 1 (not at all) to 5 (very high).

Table F. Perceptions across countries.

	Europe	Latin America	Brazil	Germany	Mexico	Netherlands	United Kingdom
<i>Is digitalization and important issue?</i>							
Among professionals in primary education*			2.9	2.3	2.2	2.9	3.3
In public policy with regard to arts education**	3.0	2.3					
<i>How intensely are digital tools used in sec. school?</i>							
Media arts**	4.1	3.4					
<i>How intensely are digital tools used: non-formal?</i>							
Visual arts							
Music*			3.5	2.9	2.6	3.3	3.8
Media arts**	4.0	3.2					
<i>Attention in pre-service training: not sufficient at all</i>							
For general teachers in primary education*	28%	54%					
<i>Opportunities prof. development: not sufficient at all</i>							
For general teachers in primary education**	18%	54%					
For arts teachers in secondary education**	12%	57%					
For arts educators in cultural institutions**	11%	30%					
For arts educators in non-formal arts education**	13%	35%					
For artists who engage in arts education**	13%	37%					

Only data for variables and in cells where there is a statistically significant difference, indicated behind the items: \*\*p<0.01; \*p<0.05; #p<0.10. Importance of digitalization and use of digital tools: average ratings on scale 1 (not at all) to 5 (very high). Attention in pre-service training and opportunities for professional development: percentages of respondents who assessed these to be not sufficient at all. The number of respondents was too low for crosstabulations of attention in pre-service training and opportunities for professional development across selected countries.

## Appendix II: Research publications

Respondents were asked: "Can you refer to one or two important and recent research publications about digitalization in/and arts education in your country? Please name author(s), title and possibly a link." The following list contains all authors and titles mentioned and the links. It also contains some websites that were mentioned without further specifications. No distinction is made between books, contributions in books, and journal articles, but the exact sources can be found via the links. All links were checked, and some corrections made. Years of publication were added where missing.

### AUSTRIA

Kayali, F. (2015)

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